

WHAT IS CLAIMED IS:

1. An optical module comprising:  
a surface light receiving type or a surface light emitting type  
5      optical element mounted on a predetermined substrate;  
at least one spacer mounted on said substrate; and  
an optical fiber array having a plurality of optical fibers buried  
therein substantially in parallel with one another with a predetermined  
pitch therebetween, said optical fiber array being mounted to said  
10     substrate with said spacer interposed between the substrate and the  
optical fiber array such that the optical fibers are opposed to a plurality  
of light receiving elements or light emitting elements of the optical  
element mounted on the substrate respectively, and said optical fiber  
array being mounted to said substrate with alignment between the end  
15     surfaces of the optical fibers and the light receiving elements or light  
emitting elements carried out by image recognition thereof.
  
2. The optical module as set forth in claim 1, wherein the  
alignment by the image recognition is carried out on the basis of image  
20     information on the surface of the substrate on which the optical element  
and the spacer have been mounted as well as image information on the  
surface of the optical fiber array at the side thereof not opposed to the  
optical element.
  
- 25     3. The optical module as set forth in claim 2, wherein the  
optical fiber array is provided with engagement means for coupling the  
optical fiber array with an optical connector each other.

4. The optical module as set forth in claim 3, wherein the engagement means provided on the optical fiber array is a recess or through hole into which a pin-like projection provided on the optical connector fits.

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5. A method of assembling an optical module comprising the steps of:

mounting a surface light receiving type or a surface light emitting type optical element on a predetermined substrate;

10 carrying out alignment between a plurality of light receiving elements or light emitting elements of said optical element and the end surfaces of a plurality of optical fibers of an optical fiber array by image recognition thereof, the end surfaces of the optical fibers being opposed to the light receiving elements or light emitting elements; and

15 mounting the optical fiber array to the substrate with at least one spacer interposed between the substrate and the optical fiber array in the state that the alignment between the light receiving elements or light emitting elements and the end surfaces of the optical fibers is being kept.

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6. The method as set forth in claim 5, wherein the alignment by the image recognition is carried out on the basis of image information on the surface of the substrate on which the optical element and the spacer have been mounted as well as image information on the surface 25 of the optical fiber array at the side thereof not opposed to the optical element.

7. The method as set forth in claim 5, wherein the optical fiber

array is fixed to the spacer mounted on the substrate in the state that the alignment between the light receiving elements or light emitting elements and the end surfaces of the optical fibers is being kept.